**FINAL**

**Manure Task Force Meeting**
**September 26, 2005, Cranberry Country Lodge, Tomah**

**Task Force members in attendance:**

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| Brian Rude, Co-Chair | Dairyland Power; DATCP Board |
| Monte Wick | Farmers Coop. Supply & Shipping |
| Andrew Hanson | Midwest Environmental Advocates |
| Jay Richardson | Prof. Dairy Producers of WI |
| Richard Gorder | WI Farm Bureau Federation Board |
| Rebecca Power | River Alliance of WI |
| Ken Blomberg | Rural Water Assoc. |
| Dan Fischer | Manitowoc Co. Exec. |
| Lisa Conley | WI Assoc. of Lakes |
| Wally Lueder | WI Farmers Union |
| Dana Cook | Manure Hauler, Sauk Co. |
| Kevin Erb | UW-Extension |
| Dan Brick | Dairy Business Assoc. |

**Task Force members absent**

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| Steve Born, Co-Chair | Retired UW Professor |
| Kevin Connors | Dane Co. Dept. of Land & Water Resources |
| Robert Selk | Trout Unlimited |

**Also in attendance:** ~10 agency staff

**Next meeting:**
Thurs. Oct 20, DATCP Boardroom, Madison.
If anyone feels strongly that we should choose a different location for November contact the Co-Chairs.

**Tentative October Agenda:**
- 1 hr: Present more information on the buffer initiative, timelines for phosphorus standard development, and economics on commodity supports.
- Short summary of the September meeting's discussion of the first half of the matrix.
- Discuss the second half of the matrix.

**Action items:**
- Agency staff work through the first half of the matrix and compile suggestions/recommendations.
- Agency staff find or create lists of a) research currently being done and b) current research needs. The group will review these lists and make some prioritizations.
- Prepare presentation/handouts for distribution before the October meeting on the following (for a 1-hr presentation):
  - local water quality standards and ordinances
  - timelines for making the evaluation of whether county manure storage ordinances are legally defensible (Stevenson)
  - the Buffer Initiative and how it relates to the P Index
  - the P Index, the TMDL process, and other models used to determine how much total P is entering a waterbody. This will also include an update on the DNR's efforts to develop a water quality criterion for phosphorus. (Stevenson)
  - biosecurity measures needed for manure transport (VandenBrook/DATCP staff).
  - the economic aspect of these issues, commodities, etc. (Farmers' Union, others?).
- Does DATCP have some analyses available on transportation costs/mechanisms?

**Meeting Logistics**
- Roll Call
- August 2005 meeting minutes approved
- Purpose of September meeting is to learn more about techniques for managing manure; then work through the matrix to pinpoint directions for future action.

**Manure management programs and approaches –Castelnuovo; Stevenson, VandenBrook**
See handouts:
- PowerPoint presentation "Manure management programs and approaches";
- Memo RE: "Manure Management Approaches and Options" providing a research summary on many options;
- Pdf file "Manure Management Approaches and Programs" sent via email is a compilation of news articles, sample forms, etc.

The presentation covered the following topics and provided examples of most:

- regional digesters
- tile line risks and practices
- manure relocation programs
- manure brokers
- manure incineration
- mandatory waste reports
- hauler licensing
- emergency response plans
- phosphorus index
- diary permits and waste management
- livestock manager certification programs
- manure spreading index generated by regional weather stations
- providing health insurance to farm families in exchange for good management practices
- insurance discounts for manure haulers with Environmental Management Systems
- proposed winter spreading ordinances (Dane, Brown and Manitowoc Cos.)
- extend well compensation program to cover manure contamination
- Pioneer Farms (will be discussed in more detail at October meeting)

The presentation also covered an explanation of DATCP & DNR complementary roles in the former "Notice of Discharge" (NOD) program for handling chronic manure management problems. Staff explained that the framework for jointly investigating manure management issues is in place and the agencies could implement a similar process to investigate and respond to the manure runoff incidents being considered by this task force. In the NOD program, DNR's role was in water quality protection, DATCP's role was providing agricultural expertise; they conducted joint investigations to provide a more balanced approach. Activity in the NOD program was greatly reduced when its specified funding source was removed and rolled into a larger competitive process. DNR has made many attempts to get separate funds for NOD program; to reinstate the funding mechanism statutory authority would have to be created for a separate funding pot for NR243 programs.

Discussion

- Brown County has proposed going beyond state rules with their winter spreading ordinance. DNR attorneys are evaluating whether that is legal or not. Issues include whether further protection is needed to protect water quality in that county, whether cost sharing is necessary, etc.
- Need to realize that moving manure can also spread diseases like Johnes; this could be a big problem. VandenBrook/DATCP staff could provide info on biosecurity measures that would be needed to transport manure.
- Manure brokering does take into account the nutrient content of manure.
- Discussed pros & cons of licensing vs. certification of haulers. (see the Information and Education category below)
- A Minnesota study on water quality benefits from increased grass & hay cover. Consider pasturing as an alternative for smaller farms. Introducing government price supports for grasses (like there are on grains) could help encourage that. Some of the Buffer Initiative work relates to this.
- A lack of water quality criterion for phosphorus may be hampering moving forward in phosphorus management—we have a target for phosphorus but it is statewide rather than localized. DNR will give an update on its efforts to develop a water quality criterion for phosphorus.

**Discovery Farms presentation**

"How Management Affects Nutrient and Sediment Losses" PowerPoint presentation –Fred Madison, Dennis Frame

Background:

- The presentation described the Discovery Farms partnership among the UW, USGS, Agricultural groups, Federal & state agencies. Their goal is to collect solid, quantifiable, unbiased data.
- Discovery Farms examine a variety of farms on different soils across Wisconsin; many are paired farms. They do surface water monitoring, tile line monitoring, and a host of other research. Discovery Farms will finish their first water year of monitoring this October.
- Questions to address: how much water really runs off of farm fields; when does this runoff occur, what is the magnitude of losses associated with this runoff; when do these losses occur? Need to know the quantity of runoff and the composition.

Take home points:

- Rainfall/Runoff: It doesn't run off every time it rains. The landscape plays a role in surface water runoff. Frozen ground runoff is significant in terms of the volume and loss of nutrients.
- Magnitude/Loss: Sediment loss occurs during non-frozen events. Sediment losses on these farms are much less than "T". With proper management farmers can achieve very low rates of soil loss. N & P loss is present during both frozen and non-frozen events. Most of the phosphorus loss is in the dissolved form.

- Manure Management: Manure spread on melting snow (or when melts are imminent) impacts water quality. Type of manure may or may not matter. Timing of application is important.

Conclusions:

- Discovery Farm sites are well below tolerable soil loss levels. Farms can achieve this and still be profitable. Phosphorus loss may be different on a farm with significant soil loss. 89-96% of rain at these sites stays on-farm.
- Farmers applying manure on frozen or snow covered ground need to evaluate the potential for a runoff event (critical time period) and runoff risk for a particular site (critical site).
- Manure applications in the late winter (when snow melt is imminent) should be done on fields which are internally drained and pose little/no risk of runoff reaching surface waters.
- Manure storage does not eliminate runoff potential; it may increase it. Farms with storage need to have it available during critical periods. Better to empty in early winter (Dec-Jan) than late winter?
- Need to define conditions (not dates) when manure spreading is risky: dates will always be wrong. Educate producers on risky conditions. Clearly identify sites that pose minimal risk.
- Questions for further consideration: Is it better to apply small amounts of manure over a number of days and fields? How does the level of bedding affect nutrient losses (pen pack)? What are the losses for manure applied in Dec-January?

<u>Discussion</u>

- Education is needed to apply the principles behind the rules so that operators know what is necessary for good management. Need to have the data to back up both the education & the rules.
- Discovery Farms is committed to writing guidance on best ways to manage manure. From producers' standpoint, getting info of this type is very effective.
- We need to set the water quality goal for the outcome we want. From the farmers' perspective, the goal is to keep the nutrients on the land. Regulations shouldn't be the main objective of this group.
- Discussed whether spreading in Dec/Jan on frozen ground could be beneficial or not—does the manure adhere better to the soil if it is later covered with snow? If you spread on north slopes which thaw slower than south slopes, does most of it go into the ground?

**Framework for evaluating options: Group Discussion**

See handout: "Evaluation of Means and Options" matrix

- Rude reminded the Task Force that their assignment is to make recommendations to the secretaries of the agencies. They can provide general guidance, and the departments will fill in the details.
- Task Force members discussed the first half of the matrix to determine which items could be the most helpful, which should be removed, combined or teased out, etc. Group suggested breaking some of the categories down so that options can be discussed individually rather than lumped.
- Member expressed the hope that the Task Force members are not only here to rubber-stamp agency priorities.

<u>Research & Development/Emerging Technologies and Management</u>

*Research Agenda (i.e. what sorts of research need to be pursued?)*

- Question on whether research being done now has input from both DNR & DATCP—DNR helps fund Discovery Farms, DATCP helps fund Pioneer Farm & UW research.
- How does the research being done by Discovery/Pioneer Farms come together into policy? (staff indicated that will be addressed somewhat next meeting)
- Secretaries should be encouraged to coordinate and develop consensus on future research and eliminate duplication. The two agencies do need to work together again, avoid political 'fence jumping'.
- Need to find or create lists of a) research currently being done and b) current research needs. The group will review these lists and make some prioritizations.
- One problem is that as producers & others work on advisory committees and seem to come to agreement but then the agencies end up changing things around again.
- When it comes to budget cutting, the two things that get a lot of cuts are research and education. Maybe this group can affirm how important these two items are to sustain.
- Need research on the best way to reach certain audiences, what types of incentives are effective for farmers.
- Staff will find or create lists of what research is currently being done, as well as a list of research needs for the group to look at and make some prioritization.

*Research causes of incidents*

- One focal point needs to be systematic data collection on each runoff event. Include what aspects leading up to the event contributed to it. Would have to be gathered by agency staff because they have the access to that information (haulers may not be able to release certain information due to legal mandates). Also need to create a compilation mechanism such as an annual summary of the data. One person noted that the DNR database currently has many gaps, and felt that it doesn't have detailed enough data to make broad recommendations yet.
- Researching funding mechanisms for nutrient management plans could be beneficial—some locations can tax directly for water protection issues. Urban water supply facilities may be interested in cost sharing for rural practices. Clarified that all farms are supposed to have nutrient management plans in place by 2008 if funding is available, but because funding is not currently available we should look for alternative sources.
- Group suggested merging the data collection category with the research category.
- To make it feasible for farmers to identify which low impact areas are available for spreading, there needs to be education for farmers on the soil types and weather conditions they can spread on.
- Sometimes it seems that agencies are more interested in litigation than in preventing problems.

*Digester research*

- Some members recommend changing this ranking from 2L to 3L. Digesters do very little to address runoff risks—the digester end-product has almost the same volume and nutrient content as the original manure had. Also, a limited number of operations could ever use it. Regional digesters can be good for use as an emergency storage, but can then create problems with intermingling pathogens.

*Alternative management systems*

There was general consensus from the group that agencies should support research & development of small, on-farm technologies that are feasible for individual farms (digesters, filter-presses), rather than large regional technologies. There may be regional solutions as well, but it would be useful to focus on small on-site technologies.

- *Spreading advisory*— Group agreed that this was a good idea and generally supported this tool. This would likely involve creating a management tool on the internet that uses future forecasts from the US Weather Service, snow melt probabilities, soil conditions, etc., to produce a risk factor for manure spreading at any given time. These sort of tools are not 100% accurate; need to use the farmers' common sense to make it work.
- *Grazing systems*— Group agreed to move this to I & E. There has already been a lot of research done on grazing systems. It may not be appropriate in this context.
- *Regional filter presses*—These have the same problems as digesters: they provide little water quality benefit or volume reduction, and increase pathogen concerns. Erb recommends removing this tool from the matrix. However Gorder noted that if research continues on filter presses they may be able to get small enough for individual farms. Could you use a centripital pump to separate solids from liquids to help be more efficient in spreading? Or are there other sorts of small systems that could be on-farm to reduce the volume of material?
- *Manure brokers*— Group agreed to remove this from the Research category and add to I & E, to provide information on how to exchange manure between farms. This concept can work well with high-value hog/poultry manure but would likely not be economically feasible for dairy manure because of high transportation costs. Kevin Erb has sample contracts that could be used as models, though there's a lot of variability and no set standard. One issue that would come into play is the requirement for CAFOs to only distribute manure to operations with 590 plan NMPs. Fertilizer law was amended to support distribution of manure off the farm, but it must go to fields with NMPs.

*Alternative storage systems*

Using storage bladders in place of temporary manure storage tanks in the field may have potential. Other systems weren't specifically discussed.

*Alternative disposal systems*— (didn't specifically discuss sanitary treatment)

- *Composting*—can be a very small or very large operation. We know how to do composting but don't have long term information on groundwater or air impacts—these would be the directions for research if composting is left in the research category.
- *Incineration*—need more research on this to determine whether it's practical or not. Could be controversial even if it works. This may be applicable to certain types of farms but most farms with a land base will want to keep the manure on the farm. Incineration results in losses of nitrogen that can be cost losses.

- *Transportation issues*—need more research into transportation costs and mechanisms. This comes into play in standard manure management planning, regional treatment/storage systems, manure brokering, etc. DATCP may have some cost analysis available.
- Under the Regulations category, consider allowing for fast tracking technologies we'd like to support which normally have to get a permit to do these things.

*Evaluate BMP effectiveness*—more research could be useful on pathogen aspects, impacts of phosphorus on surface water, and the ability of BMPs to control runoff. The group considered support for the Buffer Initiative, and asked to hear more about the initiative.

- *Reducing water usage*—need to find ways to reduce water usage in the dairy operations in order to reduce transportation costs. Parlor washwater and system cleaning create the bulk of the added water; need to devise ways to handle the washwater differently from the manure. However, manure storage facility pumps are currently designed to function with liquids, so efforts to reduce liquid manure would require a whole system renovation to handle manure as a solid or semi-solid. . Short term options for water reduction might include things like switching to water-saving sinks; long term options would require looking at entire system overhauls. This needs both research and education.
- *Tile lines*—Group supports research on tile lines in different soil types with different soil conditions.

Incentives

*Monetary incentives—*

- *Increase funding for preparing nutrient management plans (NMPs)* from state or federal levels so that all farms would have to have one as mandated in performance standards. A financial incentive would only make sense for operations that are not already required to have a nutrient management plan. DATCP has targeted grant funds to cost-share nutrient management plans where there have been manure incidents and the farms are not required to have plans. There was discussion on whether NMPs are the most cost-effective way to prevent manure runoff. NMPs help prevent chronic runoff impacts, though for acute impacts the benefits are less clear. However, both chronic and acute impacts should be addressed in the plans. Current NMPs are not water-quality based and may not be sufficient for water quality protection. NMPs do provide a fundamental education process to increase the farmer's understanding of all the components of planning. Group also discussed offering safe harbor in exchange for having and following an NMP (see below for more).
- *Manure insurance discounts*—these are already available; this item should be moved from Incentives to Education to disseminate pertinent information.

*Non-monetary incentives—*

There is a research need for a query of farm operators to determine which things really would serve as true incentives for farmers to better manage manure.

- *Health care coverage*—The economics of this would be very expensive for the government to get into. Health care issues become very complicated. It is a hard stretch for people to see the connection between health insurance and water quality; the group generally felt that the incentives should be directly related to the issue at hand. Group also questioned whether this truly would be an incentive for farmers.
- *Safe harbor/Limited Liability*—The group discussed offering safe harbor in exchange for having and following an NMP or EMS as a potentially good way to prevent acute and chronic impacts. Discussion revolved around the tradeoffs that would be needed to ensure water quality protection in exchange for limited liability. Some agriculture and environmental representatives indicated a willingness to consider the concept provided that a) the nutrient management standards were high enough and were water quality based (including phosphorus-based plans and standards, which would need to be developed), and b) were meaningful standards supported by research. Could set up an adaptive framework so that if further BMPs are needed they could be incorporated into the NMPs. Development of the water quality phosphorus standard is an essential component.
- *Green Tier*—may be related to the safe harbor idea. Green Tier applies specifically to permitted facilities. Safe Harbor could apply to operations of smaller size. However, could possibly adjust the green tier concept to apply to smaller farms.
- *Cooperative Compliance Programs (CCPs)*—these were not specifically discussed.

Information and Education

Some members suggested that education and research to gather data might be the most beneficial route of action at this point, rather than focusing on regulation or enforcement.

*Technology Transfer—*

- There have been some studies done on the differences between nutrient management workshops that just supply information versus ones that result in nutrient management still being implemented 3-5 years later. The key to long-tem success is having someone there to assist operators throughout the first 2 years until they're comfortable with implementing the plan. Personnel are currently not in place to handle this; UWEX has been receiving a lot of budget/personnel cuts. Secretaries could direct resources to UWEX to ensure these programs are put in place. Could perhaps create a mentoring program for farmers who have already successfully implemented their plans be a resource for other farmers.
- Add grazing, manure brokers, and insurance discounts to the Education category.

*Training for applicators, farmers, consultants—* The group generally supports training for applicators.

- There was a clarification on licensing versus certification. Currently, Wisconsin has a voluntary certification program for manure haulers, which is recognized by the industry as a viable and valuable program. The certification program involves broader education and encourages thinking of new approaches. Alternatively, the state or counties could mandate licensing, but this may not be as effective a program (those mandated to receive the training may not apply it as well as those attending voluntarily). Erb would like to see a requirement that permitted operations must use a certified or trained hauler. Farmers can become certified themselves, so they don't have to hire outside. Wisconsin's training program has partnered with the insurance industry to provide lower rates for certified haulers; the program has seen an 80% drop in incidences for people who have gone through 3 years of their program. Currently 40% of applicators are at level 1 in the voluntary certification program, with 20-25% at level 3.
- Another key for training is to provide flexibility that encourages new training and new technology each year, rather than being prescriptive about what has to be covered each year.

*Develop print and web materials on manure management*—Some material exists.

- Need development of informational materials on new Discovery Farms findings. Group recommends to secretaries that distributing this information to applicators and others is key.
- Creation of a weather advisory system could also fall into this category.
- Don't exclusively use the internet because not everyone will be reached that way. UWEX is a good outlet because it does have credibility with farmers, though this varies county to county. Distributing material through agricultural publications is good. Mailings are fine, and since all dairy farmers are regulated through DATCP, materials could be sent through their mailing list. Milk inspectors could bring a leaflet to farms. Keep messages short & sweet, or do them in phases with updates. Conferences will only reach the upper 10%--need to reach the other 90%. The Farmers Union & Farm Bureau do some education.
- Get the media to these Task Force meetings to report on the Task Force's discussions and findings.

*Educate non-farming public—*

- *On-farm visits*—Encourage on-site farm visits for agency staff and environmental groups who don't have as much familiarity with farms. Show both sides of issues in an unbiased and fair manner and promote understanding of issues from various perspectives. Ask secretaries to have their staff who deal with agricultural issues do some site visits to better understand the issues. Could potentially be a statewide directive for certain types of employees.
- *Public recognition programs* –River Friendly Farmer program in MN is a good model—farmers apply by completing a checklist of BMPs they use and receive designation as a River Friendly Farmer (or other sort of "gold star" designation). Whether a regulatory or voluntary model, some type of recognition program similar to this would be appropriate for those making active progress on water quality. This might not have a direct impact on water quality but it could bring some good public relations value and helps tell a story to other farmers. Some members pointed out that this program would need to be voluntary because some farmers might not want to receive the attention that such a designation might bring.
- *Urban sector education*—encourage "urban sacrifice" as well, such as phosphorus reduction in lawn care products. Discussed increasing the regulation of urban fertilizers to make it equal with agricultural regulations.